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10/008,658	11/09/2001	Jeffrey Oliver	100.344US01	7350

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EXAMINER

AHMED, SALMAN

ART UNIT PAPER NUMBER

2666

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/008,658

Applicant(s)

OLIVER ET AL.

Examiner

Salman Ahmed

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 25, 26, 29-36 and 37 is/are rejected.
- 7) ☒ Claim(s) 10-24, 27, 28 and 38-52 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 2, 3, 4, 5, 6, 7, 29, 30, 31, 32, 33, 34, 35 are rejected under 35 U.S.C. 102(e) as being anticipated by DeNap et al. (US PAT 6490273), hereinafter referred to as DeNap.

In regards to claims 1, 2, 3, 4, 5, 6, 7, 29, 30, 31, 32, 33, 34, 35 a termination unit (figure 8 element 810, business hub) for use in a digital subscriber line system, comprising: a first communication interface (figure 8 element 802) adapted for receiving first traffic having a bandwidth (figure 4, T1 interface), a second communication interface (figure 8

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element 802) adapted for receiving second traffic different from the first traffic (figure 4, V.35 interface), and a third communication interface (figure 8, interface between 810 and 817) for coupling to a digital subscriber line is anticipated by (column 12 lines 9-15) CPE 802-803 being telephones, computers, fax machines, LANs and other communications equipment typically found in a business. The business hub 801 being similar to the business hub 210 except that the business hub 810 being equipped with an xDSL/ATM interface for an xDSL/ATM connection between the business hub 810 and the DSL multiplexer 817.

The termination unit being adapted to combine the first traffic (figure 4, V.35) received at the first communication interface with the second traffic (figure 4, T1) received at the second communication interface, thereby generating a combined traffic (column 12 line 24, xDSL/ATM signals), and providing the combined traffic to the third communication interface (figure 8, interface between 810 and 817); and the combined traffic having a bandwidth greater than or equal to the bandwidth of the first traffic is anticipated by (column 12 lines 24-26) the DSL multiplexer 817 accepting xDSL/ATM signals from multiple business sites and multiplexes these signals onto a SONET/ATM OC-3 connection

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 8, 9, 25, 26, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeNap, in view of A Technical Discussion of SHDSL and Its Benefits by Efficient Networks and in view of Lozano (US PAT 6920118).

In regards to claims 8, 9, 25, 26, 36 and 37 DeNap teaches V.35 and T1 interfaces being multiplexed into xDSL signals as described in the rejections of claim 1 above.

In regards to claims 8, 9, 25, 36 and 37 DeNap does not explicitly teach a communication interface for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N1 + N2$ . In regards to claims 9 and 37, DeNap does not explicitly teach the first portion of timeslots has a number of timeslots

less than or equal to the first number of timeslots and greater than or equal to N1. In regards to claim 26, DeNap does not explicitly teach the second number of timeslots is less than or equal to 36 (timeslots 0-35).

In regards to claims 8, 9, 25, 26, 36 and 37 A Technical Discussion of SHDSL and Its Benefits by Efficient Networks teaches a type of xDSL interface known as SHDSL (page 7, Channelized Design), which is designed to be channelized with 3 to 36 B channels (64 Kbps each).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify DeNap's xDSL interface to be SHDSL interface as taught by A Technical Discussion of SHDSL and Its Benefits by Efficient Networks. The motivation is that (page 3, A Technical Discussion of SHDSL and Its Benefits by Efficient Networks, section: Building on Strengths for Real Benefits) the limitations imposed by the distance from the Central Office (CO) have always been a negative factor in the marketing of DSL. SHDSL considerably lessens this constraint, allowing DSL broadband solutions to be deployed in a greater geographic area, with better performance throughout the area.

In regards to claims 8, 9, 25, 26, 36 and 37 DeNap, in view of A Technical Discussion of SHDSL and Its Benefits by Efficient Networks teach V.35 and T1 interfaces being multiplexed into SHDSL signals and a communication interface for providing a combined traffic having a second number of timeslots, each timeslot

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corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N1 + N2$ .

In regards to claims 8, 9, 25, 26, 36 and 37 DeNap, in view of A Technical Discussion of SHDSL and Its Benefits by Efficient Networks does not explicitly teach the termination unit is adapted to map the timeslots of the first traffic to a first portion of the timeslots of the combined traffic and to map the second traffic to a second portion of the timeslots of the combined traffic.

In regards to claims 8, 9, 25, 26, 36 and 37 Lozano teaches (column 6 lines 32-56 and FIG. 4), the transmitter is connected to a network 80 or similar data source which provides CBR data 82 and VBR data 84. CBR data 82 includes multiple CBR data streams 2, which are spread by modulator 10 using CDM with a CBR spreading code 6, thereby creating CBR-CDM data streams. VBR data 84 includes multiple VBR data streams 4, which are first interleaved by modulator 88 using TDM into a TDM signal 20. The transmitter interleaves the VBR data streams 4 by inserting VBR data packets 90 into individual time slots within the TDM signal 20. Thus, the transmitter interleaves multiple VBR data streams 4 into a single TDM signal 20, which includes VBR-TDMA data. After interleaving multiple VBR data streams 4 into a single TDM signal 20, that signal is spread by modulator 10 using CDM with a VBR spreading code 8, thereby creating a VBR-TDM-CDM signal component. This VBR-TDM-CDM signal component is combined with CBR-CDM signals components by adder 92 into an aggregated signal 94.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify DeNap, in view of A Technical Discussion of SHDSL and Its Benefits by Efficient Networks' teaching by incorporating the concept of mapping different type of data in different part of the signals as taught by Lozano. The motivation is that (Lozano: column 1 lines 14-16) such method will enable to communicate multiple voice, video, and data traffic streams simultaneously in a single communications system

***Allowable Subject Matter***

6. Claims 10-24, 27, 28, 38-52 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

7. Prior art pertinent to the application but not used in office action:

- US 20020176411 A1                      US-PGPUB    Digital subscriber line services  
                                                 Nattkemper, Dieter H. et al.
- US 6351452 B1                      USPAT            Telecommunication device with  
                                                 centralized processing, redundancy protection, and on-demand insertion of  
                                                 signaling bits Koenig; Roger L. et al.
- US 20050186933 A1                      US-PGPUB    Channel equalization system and  
                                                 method            Trans, Francois
- US 20030086515 A1                      US-PGPUB    Channel adaptive equalization  
                                                 precoding system and method    Trans, Francois et al.



- US 20010036232 A1                      US-PGPUB   Interleaved generalized  
                                                                                 convolutional encoder              Betts, William L.
- WorldDsl Remote Management, ADC Telecommunication Inc.
- A Practical ADSL Technology Following a Decade of Effort,   Reusens et al.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571)272-8307. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571)272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Salman Ahmed  
Examiner  
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SA

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A handwritten signature in black ink, appearing to be 'Dang Ton', written in a cursive style.

DANG TON  
PRIMARY EXAMINER